CDM

Memorandum

To: *Victor Ketellapper, EPA Remedial Project Manager, Libby Team Leader*
Mike Cirian, EPA Remedial Project Manager for Operable Unit 4

From: *Nick Raines, CDM 329 Project Manager*

Date: *October 1, 2010*

Subject: *Revision 1, OU4 Outdoor Ambient Air Sampling Program for 2010-2011*

Outdoor ambient air in operable unit 4 (OU4) of the Libby Asbestos Site, Libby, Montana has been evaluated in past years through an EPA air sampling program, which employed a series of 14 sampling stations positioned throughout the OU that operated between October 2006 and June 2008. Sampling was conducted in accordance with the *Final Revision 1 Sampling and Analysis Plan for Outdoor Ambient Air Monitoring at the Libby Asbestos Site, Operable Unit 4* (Ambient Air SAP) (EPA 2006), and results summarized in the *Final Summary of Outdoor Ambient Air Monitoring for Asbestos at the Libby Asbestos Site* (EPA 2009).

EPA resumed the OU4 outdoor ambient air sampling program in May 2010 at six locations along major transportation corridors within the OU, and will continue the program through April 2011. CDM will continue to implement the ambient air program under Response Action Contract Number EP-W-05-049, Work Assignment Number 329-RICO-08BC (Subtask 3.5). This revision to the original OU4 ambient air technical memorandum dated March 15, 2010 serves as an addendum to the 2006 Ambient Air SAP (EPA 2006) and presents current sampling locations/frequencies and minor changes in the overall sampling process that will occur. A summary of changes made in this version of the ambient air technical memorandum from the March 15, 2010 version, which include EPA-approved field modifications documented in Libby Asbestos Project Record of Modification Forms #LFO-000150 and LFO-00153, are:

- Clarification regarding weather station location and data collection process
- Change to sampling schedule
- Clarification on use of EPA-designated laboratories for filter drying in the event the onsite asbestos analytical laboratory is not available

- Clarification regarding the orientation of sample cassettes upon collection
- Clarification on field quality control (QC) sample collection

Sampling Locations

The six sampling locations are positioned along the main transportation routes within OU4, as shown on Figure 1. Care was given to select locations where public safety (i.e., positioned away from foot and actual vehicle traffic) and security of sampling equipment is optimized, and where electricity is accessible. The locations also provide adequate spatial coverage of the major transportation corridors with OU4. The locations are identified below:

- L1 represents 30414 US Highway 2, located northwest of the Libby town center approximately 2.3 miles from the intersection of US Highway 2 and MT Highway 37.
- L2 represents 32000 US Highway 2, located northwest of the Libby town center approximately 1.4 miles from the intersection of US Highway 2 and MT Highway 37.
- L3 represents City Service Road in the vicinity of Riverside Park. Located off MT Highway 37, L3 is approximately 0.6 miles from the intersection of US Highway 2 and MT Highway 37.
- L4 represents 1675 MT Highway 37, located northeast of the Libby town center approximately 2.9 miles from the intersection of US Highway 2 and MT Highway 37.
- L5 is positioned at 60 Port Boulevard, north of the CDM Project Office close to the entrance road to the Kootenai Business Park. This location is approximately 0.9 miles from the intersection of US Highway 2 and MT Highway 37.
- L6 represents 36304 US Highway 2, located south of the Libby town center approximately 3.6 miles from the intersection of US Highway 2 and MT Highway 37.

Pre-sampling Activities

Prior to the start of the 2010 ambient air sampling program in May 2010, CDM coordinated the installation of equipment shelters at each of the six sampling locations. Sampling equipment was placed on the east or west side of buildings (as applicable), approximately 15 feet away from outer walls to reduce building interference with wind patterns and allow the samples to be exposed to the dominant northwest to southeast air patterns in the Kootenai valley.

The equipment and supplies needed to continue the OU4 ambient air program through April 2011 are either available in CDM inventory or will be procured by CDM. CDM will contact property owners to advise them of the continued sampling effort, and will complete any

electrical cost reimbursement forms to property owners (for powering the sampling equipment) at the end of the program.

A field planning meeting update will be conducted to ensure all CDM personnel involved in sample collection (field staff) or handling (sample coordinator) understand the program requirements and sampling objectives.

Data Collection

The 2010 ambient air sampling program will follow all equipment calibration, sample collection, field documentation (including photographs), equipment decontamination, investigation derived waste handling, quality assurance/quality control (QA/QC), and analytical procedures contained in the Ambient Air SAP (EPA 2006), with the following exceptions:

- **Section 4.2 Field Documentation**: Documentation (e.g., field sample data sheets [FSDSs]) will not be sent to Volpe Center personnel for data entry or retention. The current version of the Libby Project Stationary Air FSDS will be used. Guidance on the completion of FSDSs is provided in project-specific procedure CDM-LIBBY-03, Revision 5. The current version of EPA's Libby data management requirements for Scribe reporting will be implemented.

- **Section 4.2.3 Sample Labeling and Identification**: For consistency and retrievability of data, samples will be identified using the same sample identification format as used previously. This format is: AA-#####

  Where: AA = ambient air
  ##### = a sequential five digit number

To ensure that samples are properly analyzed or archived by the CDM sample coordinator, the 'Location Description' and 'Category' fields on the FSDS will be used to summarize the sample classification in the following format:

Location Description on FSDS	Category	Sample Description
AA-HV-05	FS (field sample)	Ambient air field sample collected approximately 5 feet above ground surface at the ***higher*** flow rate
AA-LV-05	FS (field sample)	Ambient air field sample collected approximately 5 feet above ground surface at the ***lower*** flow rate
AA-CO-HV-05	FS (field sample)	Ambient air co-located sample collected approximately 5 feet above ground surface at the ***higher*** flow rate
AA-CO-LV-05	FS (field sample)	Ambient air co-located sample collected approximately 5 feet above ground surface at the ***lower*** flow rate

AA-Blank	LB (lot blank)	Ambient air lot blank
AA-Blank	FB (field blank)	Ambient air field blank
AA-Blank	DB (prep dry blank)	Ambient air preparation drying blank

The field QC samples listed in the table above are discussed in the QA/QC section of this memorandum.

- **Section 4.3.1 Selection of Outdoor Ambient Air Sampling Locations**: Samples will be collected at each of the six locations (or stations) discussed in the previous section. Locations were selected using the basic approach discussed in the previous section. Reference samples from offsite locations will not be collected. Weather data will be downloaded daily during each day of ambient air sampling by CDM Denver Geographic Information System support staff using the National Oceanic and Atmospheric Administration station LBBM8, located at 1263 MT Highway 37 (Libby fire cache). Weather data will be compiled and provided promptly (within a few days) following each event via email (Excel file) to the ambient air investigation lead, who will post the files to the CDM Libby e-room. The coordinates for LBBM8 are:

Longitude	Latitude
-115.539080941	48.403632031

- **4.3.2.1 Collection Interval and Flow Rates**: The continuous 5-day (approximately 120-hour) collection interval prescribed in the Ambient Air SAP will be followed to ensure a target volume of 14,000 liters per sample is gathered. Each 5-day period is referred to as a "sampling event". One high flow rate and one low flow rate sample will be collected over the same period of time during each sampling event at each station using target flow rates of 2.0 and 1.5 liters, respectively. The low flow rate sample is intended to serve as a backup if the higher flow rate sample is overloaded or damaged; thus, the low flow rate sample will initially be archived unless the primary sample is determined unsuitable for analysis. Flow rate checks will be conducted twice daily in conjunction with equipment/filter checks (see Section 4.3.2.2 bullet below). It should be noted that sampling flow is not interrupted during flow rate checks and therefore does not impact sample collection. Similar to the previous OU4 ambient air sample collection, recommended flow rates and sample times may be adjusted to ensure the appropriate cassette filter loading needed to achieve the preferred sample preparation (i.e., direct prep) and analytical sensitivity goals.

- **4.3.2.2 Sampling Schedule**: During October and November 2011, sampling will occur twice per month at each station, for a total of four sampling events. Sampling will occur on an approximate 15-day (5 days on and 10 days off) schedule and will begin during a 3- to 4-hour period on a predetermined day of the week. The October/November schedule will focus on days when EPA response action truck hauling is in progress (typically Monday

through Saturday). From December 2010 through April 2011, sampling will occur once monthly at each station, for a total of five sampling events. This schedule will not be contingent upon response action work (which will be off-season) and will therefore include some Sundays. A sampling schedule is provided herein. Sampling equipment will be checked twice daily during sampling days to ensure proper operation, and cassette filters will be observed for any obvious signs of overloading. For high volume samples, if visible loading is observed on a sample filter or if decreased flow is noted due to filter plugging, the collection of that sample will be concluded and the sample marked for archive following the filter drying step (see Section 4.3.3 bullet below). The corresponding low volume sample will continue to be collected for the full sampling event period and submitted for analysis. A single sample cassette per flow rate per station will be collected during a sampling event. No reference samples from offsite locations will be collected.

- **Section 4.3.2.3 Filter Type – Pore Size**: Samples will be collected solely using 25-millimeter diameter, 0.8-micron filter pore size cassettes. No samples will be collected on cassettes with a 0.45-micron filter pore size.

- **Section 4.3.2.4 Sample Height**: Samples, including field and co-located samples, will be collected solely from a height representing the adult breathing zone (approximately 5 feet above ground surface). No child-height samples will be collected.

- **Section 4.3.3 Chain-of-Custody Requirements**: Chain-of-custody (COC) forms will be produced using the electronic Libby Asbestos Sample Tracking Information Center application. A copy of the revised 2010 ambient air sampling analytical summary sheet will accompany each COC. The COC form will clearly designate samples for either analysis or archive, as well as the appropriate media code from the analytical summary sheet, in the COC form comments for each sample. It is anticipated that CDM will relinquish all high and low flow rate samples to the onsite asbestos analytical laboratory for initial filter drying. If the onsite laboratory is not available, EPA will designate the receiving laboratory.

- **Section 5.1 Analytical Methods**: EPA will designate the analytical laboratory and provide coordination between all laboratories handling the OU4 ambient air samples. The same laboratory will both prepare and analyze the samples. Upon analysis, in the event that a high flow rate sample is deemed overloaded or damaged, the laboratory will contact the CDM sample coordinator to request a revised COC form indicating analysis is requested for the low flow rate paired sample.

- **Section 5.4 Laboratory Custody Procedures and Documentation**: EPA will procure the analytical laboratories supporting the 2010 ambient air sampling program and establish laboratory custody procedures and documentation.

- **Section 5.5 Documentation and Records, and Section 5.6 Data Management**: The analytical laboratory will not be required to submit data reports to the CDM laboratory coordinator, and the Volpe Center will no longer receive or store hard copy or electronic sample data. EPA will coordinate with the analytical laboratories regarding reporting requirements and results distribution; however, CDM will facilitate this process to the extent possible. CDM will provide all field documentation electronically (e.g., using e-room), as directed by EPA.

- **Section 6.0 Assessment and Oversight**: Volpe Center personnel will not be involved in the assessment and oversight process. EPA and CDM will communicate directly regarding performance assessments (e.g., field or laboratory audits) and quality issues/corrective actions.

- **Section 7.0 Data Validation and Usability**: Volpe Center personnel will not be involved in the data validation and usability process. No data review, validation, or verification, or data quality objectives assessment by CDM is planned for this data collection effort.

- **Site-specific SOP for the Collection of Outdoor Ambient Air Samples (CDM-LIBBY-12, Revision 1), Section 5.3.2**: Sampling Protocol procedure #6 is modified as follows: "At the end of the sampling period, ~~orient the sample cassette up,~~ do not remove the sampling cassette from the sampling train. Turn the pump off." Based on the sample collection setup implemented in 2010 where the sampling cassette is placed up to 15 feet away from the pump, it is impracticable to orient the cassette upwards while simultaneously turning off the pump.

Quality Assurance/Quality Control

QA/QC will be maintained by CDM for the duration of the 2010-2011 ambient air field activities through several processes.

First, CDM will ensure that procedures described in the Ambient Air SAP (EPA 2006) and this technical memorandum are followed and that any issues potentially affecting data quality are promptly reported to the EPA Remedial Project Manager via daily impact/observation (DOI) memoranda. Samples will be checked once daily to ensure that equipment is operating properly and that no obvious overloading of cassette filters is occurring.

Second, field documentation, including FSDSs, logbook information, and DOI memoranda, will be reviewed for accuracy and completeness prior to distribution. If errors are found, field documentation will be revised by the author using a single strikeout, initial, and date, with the correct information entered in close proximity to the erroneous entry. CDM will ensure revised field documentation is circulated to the appropriate receiving parties and project repositories.

Third, field deviations from or clarifications to the guidance documents will be recorded using a DOI memorandum (for event-specific issues/changes) or a Libby Asbestos Project Record of Modification Form for Field Activities (for programmatic issues/changes). The Record of Modification Form will also be used to document any information of interest requested by EPA Project Management. Both forms are available in the Ambient Air SAP (EPA 2006).

Fourth, three types of field QC samples will be collected: lot blanks, field blanks, and co-located samples. The field will also submit one preparation drying blank (unused cassette) per event for the purpose of laboratory QC. The Ambient Air SAP (EPA2006) includes descriptions of each of these QC samples; however, the following collection and analysis frequencies, which are consistent with earlier 2010 ambient air sampling, will be employed:

Field QC Sample Type	Collection/Analysis Frequency
Lot blank	1/500 field samples (per LFO-000106)
Field blank	1/event at one random sampling location, to be collected on the final day of the event (per LFO-000150)
Co-located sample	1 at both flow rates (high and low)/sampling location

Last, it is anticipated that all laboratory QA/QC requirements applicable to the specific samples collected under this technical memorandum will be in effect, per the Ambient Air SAP (EPA 2006). Analytical laboratories should pay particular attention to the laboratory modifications to analytical methods specified in Section 5 of the SAP.

Reporting

As it becomes available, the ambient air data may be obtained via subscription from the Libby Scribe project database. Final reporting (i.e., production of a summary report) will be coordinated through and provided by EPA.

References

EPA. 2009. Final Summary of Outdoor Ambient Air Monitoring for Asbestos at the Libby Asbestos Site. December 17.

EPA. 2006. Final Revision 1 Sampling and Analysis Plan for Outdoor Ambient Air Monitoring at the Libby Asbestos Site, Operable Unit 4, Libby, Montana. December 7.

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Station	Location
L1	30414 US Highway 2
L2	32000 US Highway 2
L3	City Service Rd
L4	1675 MT Highway 37
L5	60 Port Blvd
L6	36304 US Highway 2

Mine Site

= Ambient Air Locations

St. Mary's Lake
Kootenai River
Pipe Creek
Fairy Creek
Canyon Creek
Libby Dam
Former Screening Plant
J. Neils Park
Former Export Plant
Kootenai Valley Head Start
Libby Elementary School
Libby High School
Libby School District Administration Building
Fireman's Park
Parmenter Creek
Former Stimson Lumber Mill
Libby Middle School
Libby Groundwater Site
Pioneer Park
Cabinet View Country Club
Flower Lake
Flower Creek
Flower Creek Reservoir
Granite Creek
Libby Airport
Libby Creek
Fisher River

Legend

- Highway
- River and Creek
- Lake and Reservoir
- OU4 - Residential, Commercial, Industrial Properties including Schools and Parks

N W E S

Scale of Feet

0 3,000 6,000 9,000 12,000

1 inch = 6,000 feet

Figure 1
Operable Unit 4 Site Map

Libby, Montana

CDM

Document: R:\2603-Volpe\OU4\MXD\Figure1-3_OU4_SiteMap_091230.mxd

Libby Asbestos Site, OU4
Ambient Air Sampling Schedule for 2010-2011
REVISION 2

Station Location Name	Station Location Number		Event 1																Event 2																	Event 3								
		5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21	5/22	5/23	5/24	5/25	5/26	5/27	5/28	5/29	5/30	5/31	6/1	6/2	6/3	6/4	6/5	6/6	6/7	6/8	6/9	6/10	6/11	6/12	6/13	6/14	6/15	6/16	6/17	6/18	6/19	6/20	6/21	6/22	6/23	6/24	6/25	6/26	6/27
		T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S
30414 US Highway 2	2010-1		S	→	→	→	→	F											S	→	→	→	→	F												S	→	→	→	→	F							
32000 US Highway 2	2010-2		S	→	→	→	→	F											S	→	→	→	→	F												S	→	→	→	→	F							
City Service Rd	2010-3		S	→	→	→	→	F											S	→	→	→	→	F												S	→	→	→	→	F							
1675 MT Highway 37	2010-4		S	→	→	→	→	F											S	→	→	→	→	F												S	→	→	→	→	F							
60 Port Blvd	2010-5		S	→	→	→	→	F											S	→	→	→	→	F												S	→	→	→	→	F							
36304 US Highway 2	2010-6		S	→	→	→	→	F											S	→	→	→	→	F												S	→	→	→	→	F							

Station Location Name	Station Location Number	6/28	6/29	6/30	7/1	7/2	7/3	7/4	7/5	Event 4																			Event 5															Event 6						
		M	T	W	Th	F	S	S	M	7/6	7/7	7/8	7/9	7/10	7/11	7/12	7/13	7/14	7/15	7/16	7/17	7/18	7/19	7/20	7/21	7/22	7/23	7/24	7/25	7/26	7/27	7/28	7/29	7/30	7/31	8/1	8/2	8/3	8/4	8/5	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14
										T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S
30414 US Highway 2	2010-1									S	→	→	→	→	F															S	→	→	→	→	F													
32000 US Highway 2	2010-2									S	→	→	→	→	F															S	→	→	→	→	F													
City Service Rd	2010-3									S	→	→	→	→	F															S	→	→	→	→	F													
1675 MT Highway 37	2010-4									S	→	→	→	→	F															S	→	→	→	→	F													
60 Port Blvd	2010-5									S	→	→	→	→	F															S	→	→	→	→	F													
36304 US Highway 2	2010-6									S	→	→	→	→	F															S	→	→	→	→	F													

Station Location Name	Station Location Number	8/15	8/16	8/17	8/18	8/19	8/20	8/21	8/22	Event 7														Event 8												Event 9													
		S	M	T	W	Th	F	S	S	8/23	8/24	8/25	8/26	8/27	8/28	8/29	8/30	8/31	9/1	9/2	9/3	9/4	9/5	9/6	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19	9/20	9/21	9/22	9/23	9/24	9/25	9/26	9/27	9/28	9/29	9/30	10/1
										M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F
30414 US Highway 2	2010-1									S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F						
32000 US Highway 2	2010-2									S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F						
City Service Rd	2010-3									S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F						
1675 MT Highway 37	2010-4									S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F						
60 Port Blvd	2010-5									S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F						
36304 US Highway 2	2010-6									S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F						

Station Location Name	Station Location Number			Event 10															Event 11																Event 12													Event 13			
		10/2	10/3	10/4	10/5	10/6	10/7	10/8	10/9	10/10	10/11	10/12	10/13	10/14	10/15	10/16	10/17	10/18	10/19	10/20	10/21	10/22	10/23	10/24	10/25	10/26	10/27	10/28	10/29	10/30	10/31	11/1	11/2	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13	11/14	11/15	11/16	11/17	11/18
		S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th
30414 US Highway 2	2010-1			S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F										S	→	→	→
32000 US Highway 2	2010-2			S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F										S	→	→	→
City Service Rd	2010-3			S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F										S	→	→	→
1675 MT Highway 37	2010-4			S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F										S	→	→	→
60 Port Blvd	2010-5			S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F										S	→	→	→
36304 US Highway 2	2010-6			S	→	→	→	→	F									S	→	→	→	→	F									S	→	→	→	→	F										S	→	→	→

Station Location Name	Station Location Number		13 cont.																									Event 14																				
		11/19	11/20	11/21	11/22	11/23	11/24	11/25	11/26	11/27	11/28	11/29	11/30	12/1	12/2	12/3	12/4	12/5	12/6	12/7	12/8	12/9	12/10	12/11	12/12	12/13	12/14	12/15	12/16	12/17	12/18	12/19	12/20	12/21	12/22	12/23	12/24	12/25	12/26	12/27	12/28	12/29	12/30	12/31	1/1	1/2	1/3	1/4	1/5
		F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W	Th	F	S	S	M	T	W
30414 US Highway 2	2010-1	→	F																									S	→	→	→	→	F															
32000 US Highway 2	2010-2	→	F																									S	→	→	→	→	F															
City Service Rd	2010-3	→	F																									S	→	→	→	→	F															
1675 MT Highway 37	2010-4	→	F																									S	→	→	→	→	F															
60 Port Blvd	2010-5	→	F																									S	→	→	→	→	F															
36304 US Highway 2	2010-6	→	F																									S	→	→	→	→	F															

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Libby Asbestos Site, OU4
Ambient Air Sampling Schedule for 2010-2011
REVISION 2

								Event 15																												Event 16							
Station Location Name	**Station Location Number**	**1/6**	**1/7**	**1/8**	**1/9**	**1/10**	**1/11**	**1/12**	**1/13**	**1/14**	**1/15**	**1/16**	**1/17**	**1/18**	**1/19**	**1/20**	**1/21**	**1/22**	**1/23**	**1/24**	**1/25**	**1/26**	**1/27**	**1/28**	**1/29**	**1/30**	**1/31**	**2/1**	**2/2**	**2/3**	**2/4**	**2/5**	**2/6**	**2/7**	**2/8**	**2/9**	**2/10**	**2/11**	**2/12**	**2/13**	**2/14**	**2/15**	**2/16**	**2/17**	**2/18**	**2/19**	**2/20**	**2/21**	**2/22**
		Th	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**
30414 US Highway 2	2010-1							*S*	→	→	→	→	*F*																													*S*	→	→	→	→	*F*		
32000 US Highway 2	2010-2							*S*	→	→	→	→	*F*																													*S*	→	→	→	→	*F*		
City Service Rd	2010-3							*S*	→	→	→	→	*F*																													*S*	→	→	→	→	*F*		
1675 MT Highway 37	2010-4							*S*	→	→	→	→	*F*																													*S*	→	→	→	→	*F*		
60 Port Blvd	2010-5							*S*	→	→	→	→	*F*																													*S*	→	→	→	→	*F*		
36304 US Highway 2	2010-6							*S*	→	→	→	→	*F*																													*S*	→	→	→	→	*F*		

																						Event 17																								
Station Location Name	**Station Location Number**	**2/23**	**2/24**	**2/25**	**2/26**	**2/27**	**2/28**	**3/1**	**3/2**	**3/3**	**3/4**	**3/5**	**3/6**	**3/7**	**3/8**	**3/9**	**3/10**	**3/11**	**3/12**	**3/13**	**3/14**	**3/15**	**3/16**	**3/17**	**3/18**	**3/19**	**3/20**	**3/21**	**3/22**	**3/23**	**3/24**	**3/25**	**3/26**	**3/27**	**3/28**	**3/29**	**3/30**	**3/31**	**4/1**
		W	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**W**
30414 US Highway 2	2010-1																					*S*	→	→	→	→	*F*												
32000 US Highway 2	2010-2																					*S*	→	→	→	→	*F*												
City Service Rd	2010-3																					*S*	→	→	→	→	*F*												
1675 MT Highway 37	2010-4																					*S*	→	→	→	→	*F*												
60 Port Blvd	2010-5																					*S*	→	→	→	→	*F*												
36304 US Highway 2	2010-6																					*S*	→	→	→	→	*F*												

								Event 17																																											
Station Location Name	**Station Location Number**	**4/2**	**4/3**	**4/4**	**4/5**	**4/6**	**4/7**	**4/8**	**4/9**	**4/10**	**4/11**	**4/12**	**4/13**	**4/14**	**4/15**	**4/16**	**4/17**	**4/18**	**4/19**	**4/20**	**4/21**	**4/22**	**4/23**	**4/24**	**4/25**	**4/26**	**4/27**	**4/28**	**4/29**	**4/30**
		T	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**	**W**	**Th**	**F**	**S**	**S**	**M**	**T**
30414 US Highway 2	2010-1														*S*	→	→	→	→	*F*											
32000 US Highway 2	2010-2														*S*	→	→	→	→	*F*											
City Service Rd	2010-3														*S*	→	→	→	→	*F*											
1675 MT Highway 37	2010-4														*S*	→	→	→	→	*F*											
60 Port Blvd	2010-5														*S*	→	→	→	→	*F*											
36304 US Highway 2	2010-6														*S*	→	→	→	→	*F*											

Notes:

S = sample start day

F = sample stop day

--> = sample collection duration (5 days total)

CDM field audit

Holiday

CDM

Charge No.:. _ _ _ _-_ _ _-_ _ _-_ _ _ _ _ _
(write in or place label here)

Sheet No.: SA- **06004**

LIBBY FIELD SAMPLE DATA SHEET (FSDS) FOR STATIONARY AIR

Address: _____ Sampling Date: _____

Field Logbook No: _____

Page No: _____

Sampling Team: CDM Other _____ Names:_____

Data Item	Cassette 1	Cassette 2	Cassette 3
Index ID			
Location ID			
Sample Group			
Location Description			
Category (circle)	FS FB-(field blank) LB-(lot blank) DB-(prep-dry blank)	FS FB-(field blank) LB-(lot blank) DB-(prep-dry blank)	FS FB-(field blank) LB-(lot blank) DB-(prep-dry blank)
Matrix Type (circle)	Indoor Outdoor NA	Indoor Outdoor NA	Indoor Outdoor NA
Filter Diameter (circle)	25mm Other _____	25mm Other _____	25mm Other _____
Pore Size (circle)	PCM- 0.8 Other _____	PCM- 0.8 Other _____	PCM- 0.8 Other _____
Flow Meter Type (circle)	Rotometer DryCal NA	Rotometer DryCal NA	Rotometer DryCal NA
Pump ID Number			
Flow Meter ID No.			
Start Date			
Start Time			
Start Flow (L/min)			
Stop Date			
Stop Time			
Stop Flow (L/min)			
Pump fault? (circle)	No Yes NA	No Yes NA	No Yes NA
MET Station onsite? (circle)	No Yes NA	No Yes NA	No Yes NA
Sample Type (circle)	Pre Post Clear 2nd Clear 3rd Clear NA	Pre Post Clear 2nd Clear 3rd Clear NA	Pre Post Clear 2nd Clear 3rd Clear NA
Field Comments Cassette Lot Number:_____	Archive Blank (circle): Yes No	Archive Blank (circle): Yes No	Archive Blank (circle): Yes No
GPS File (fill in or circle)	Filename:_____ NA	Filename:_____ NA	Filename:_____ NA

v 100709

For Field Team Completion (Initials)	Completed by: _____ QC by: _____	For Data Entry	Entered by: _____ QC by: _____
For eFSDS validation	Validated _____	Validated _____	Validated _____

SAP ANALYTICAL SUMMARY # OU4AA0310 – Rev 1
SUMMARY OF PREPARATION AND ANALYTICAL REQUIREMENTS FOR ASBESTOS

SAP Title: Technical Memorandum, Revision 1 to the Final – Revision 1 Sampling and Analysis Plan (SAP) for Outdoor Ambient Air Monitoring, dated December 7, 2006 (the 12/07/06 document is here forth referred to as the Ambient Air SAP).

SAP Date (Revision): October 1, 2010 (Revision 1)

EPA Technical Advisor: Nicole Bein (303-312-7075, Bein.Nicole@epamail.epa.gov)
(contact to advise on DQOs of SAP related to preparation/analytical requirements)

Sampling Program Overview: The original objectives of the Libby Asbestos Site (site) ambient air program were to: 1) to collect data of sufficient representativeness and quality to estimate human health risks associated with inhalation of LA in outdoor ambient air in and around the city of Libby; and 2) to collect data to characterize the spatial patterns and temporal trends of LA occurrence in outdoor ambient air within the study area of the Libby Superfund Site. Initial ambient air data was collected between October 2006 and June 2008 (in accordance with the Ambient Air SAP) and this data has been evaluated by EPA. In order to continue gathering outdoor ambient air data specific to the transportation corridors within operable unit 4 of the site, EPA implemented additional air sampling from May through September 2010, and will continue the program through April 2011. The continued sampling, scheduled to begin in October 2010, will be conducted in accordance with Revision 1 of the OU4 Outdoor Ambient Air Sampling Technical Memorandum, for which the sampling and analysis strategy is based on the 2006 Ambient Air SAP. A total of 84 ambient (stationary) air field samples will be collected; half will be analyzed (pending filter loading evaluation at the analytical laboratory) and half archived.

Sample ID Prefix: AA-

Medium-Specific TEM/PCM Preparation and Analytical Requirements for Field Samples:

Medium Code	Medium, Sample Type	Preparation Details				Analysis Details			Applicable Laboratory Modifications
		Investigative? (a)	Indirect Prep? (a,b)		Filter Archive? (b)	Method(s)	Recording Rules	Analytical Sensitivity/ Prioritized Stopping Rules	
			With Ashing (b)	Without Ashing (b)					
A	Outdoor Ambient (Stationary) Air Samples	Yes	Yes, for high flow rate samples only if both the high and low flow rate filter pair display >25% loading with organic material	No	Yes	TEM ISO 10312	All Asbestos; L: ≥0.5µm AR: ≥3:1	Count until one is achieved: i) Target S = 0.00004 cc-1, or ii) 100 LA found	LB-000019, LB-000028, LB-000029b, LB-000030, LB-000031a, LB-000053, LB-000055, LB-000066c, LB-000084, LB-000085

(a) See LB-000053 for additional details (b) See most current version of EPA-LIBBY-08 for preparation details

TEM/PCM Preparation and Analytical Requirements for Quality Control Samples:

Medium Code	Sample Type	Preparation Details			Analysis Details			Applicable Laboratory Modifications
		Indirect Prep?		Archive?	Method	Recording Rules	Stopping Rules	
		With Ashing	Without Ashing					
B	Field Blank	No	No	Yes	TEM ISO 10312	All Asbestos; L: ≥0.5µm AR: ≥3:1	Evaluate 0.1 mm^2 of filter area	LB-000019, LB-000028, LB-000029b, LB-000030, LB-000031a, LB-000053, LB-000066c, LB-000084, LB-000085
C	Lot Blank	No	No	Yes	TEM ISO 10312	All Asbestos; L: >0.5µm AR: >3:1	Evaluate 0.1 mm^2 of filter area	LB-000019, LB-000028, LB-000029b, LB-000030, LB-000031a, LB-000053, LB-000066c, LB-000084, LB-000085
D	Drying Blank	No	No	Yes	TEM ISO 10312	All Asbestos; L: >0.5µm AR: >3:1	Evaluate 0.1 mm^2 of filter area	LB-000019, LB-000028, LB-000029b, LB-000030, LB-000031a, LB-000053, LB-000066c, LB-000084, LB-000085

PLM Preparation and Analytical Requirements: N/A

Laboratory Quality Control Frequencies:

TEM: Lab Blank – 4%
Recount Same – 1%
Recount Different – 2.5%
Verified Analysis – 1%
Repreparation – 1%
Interlab – 0.5%

Requirements Revision:

Revision #:	Effective Date:	Revision Description
0	03/09/10	N/A
1	10/01/10	Extends the ambient air sampling schedule through April 2011

Analytical Laboratory Review Sign-off:

All laboratories signed the original version of this analytical summary sheet (Rev0); this revision did not require another signature process.